

U.S. Application No. 10/608,335
Response to Office Action dated January 18, 2007

Attorney Docket: 500.42880X00

REMARKS

The present Amendment amends claims 1, 3 and 13, leaves claims 7, 9-12, 14, and 15 unchanged. Therefore, the present application has pending claims 1, 3, 7 and 9-15.

Claims 1, 3 and 13 were amended to more clearly recite features of the present invention. More specifically, minor changes were made to the claim language to clarify features of the present invention, and these changes are fully supported by the language of the previously presented claims. Therefore, the present amendment does not include any new issues, and Applicants believe that further search is not required.

35 U.S.C. §103 Rejections

Claims 1, 3, 7 and 9-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Publication No. 09-149894: *English Computer Translation from the Patent Abstracts of Japan* to Atsushi in view of U.S. Patent No. 5,944,530 to Ho et al. ("Ho"), and further in view of Japanese Publication No. 09-149894 (*English Computer Translation from the Patent of Abstracts of Japan*) to Fumio. This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 1, 3, 7 and 9-14, are not taught or suggested by Atsushi, Ho or Fumio, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

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Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a learning condition judging program and a system as recited, for example, in independent claims 1, 3 and 13.

The present invention, as recited in claim 1, and a similarly recited in claims 3 and 13, provides a learning condition judging program, which is embodied on a computer readable medium, and is executable in an information processing apparatus connected to a near infrared measuring device. The program is operable on the information processing apparatus to perform a step of starting a learning program in the information processing apparatus. The program is also operable on the information processing apparatus to perform a step of continuously acquiring, as the learning program progresses, measurement information of a blood flow rate in a brain of a user of the information processing apparatus, the measurement information being obtained from the near infrared measuring device through an information acquiring means. The program is further operable on the information processing apparatus to perform a step of acquiring input information and operation information given by the user to the information processing apparatus through input means, where the input information and the operation information indicate progress of the learning program. Furthermore, the program is operable on the information processing apparatus to perform a step of acquiring audio or video information of the user of the information processing apparatus, so as to obtain attention information of the user through at least one of a microphone and a camera connected to the

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information processing apparatus. The program is also operable on the information processing apparatus to perform steps of judging a degree of concentration of the user to the learning program, using the measurement information of the blood flow rate and the attention information, and displaying the degree of concentration of the user and the attention information of the user with the progress of the learning program. The prior art does not teach or suggest all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either of Atsushi, Ho or Fumio, whether taken individually or in combination with each other.

Atsushi teaches a living body input device and living body controller using an optical living body measurement method. However, there is no teaching or suggestion in Atsushi of the learning condition judging program executable in an information processing apparatus and a system for judging a learning condition, as recited in claims 1, 3 and 13 of the present invention.

Atsushi discloses a device and method for measuring localized brain functions to control a computer, a game, an environment controller, a learning level judgment device, a vehicle alarm, medical diagnostic and alarm devices, a lie detector, an intention display device, and an information transmitter, etc. The device includes an optical brain function measurement device, which is attached to a user by use of optical fibers for irradiation and convergence. The head part transmission light intensity of respective measurement areas measured by the optical brain

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function measurement device is input to an arithmetic unit. The arithmetic unit uses the head part transmission light intensity of the respective measurement areas and the absorption coefficient of oxidized and reduced hemoglobin stored in a storage device to determine output signals. The output signals are input to an external device, which performs an operation corresponding to the type of signal input to the external device.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes acquiring audio or video information of the user of the information processing apparatus, so as to obtain attention information of the user through at least one of a microphone and a camera connected to the information processing apparatus. Atsushi does not disclose this feature, and the Examiner does not rely upon Atsushi for teaching acquiring audio or video information through at least one of a microphone and a camera connected to the information processing apparatus (see rejection of claim 2 on page 4 of Office Action). As described in paragraph [0001], Atsushi is directed to the control of a device without the use of an input means, such as a keyboard or a mouse. An object of Atsushi is to control a device by using measured localized brain functions of a user, rather than using conventional input means. Therefore, Atsushi teaches away from using conventional input means, but rather uses electrodes attached to the head of a user (see, e.g., Drawings 1, 6 and 10). Accordingly, as conceded by the Examiner, Atsushi does not disclose acquiring audio or video information through at least one of a microphone and a camera connected to the information processing apparatus, as claimed. Applicants submit that because Atsushi

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teaches away from using conventional input means, Atsushi does not teach or suggest the claimed feature.

In response to Applicants' arguments that Atsushi teaches away from using conventional input means, the Examiner asserts that because Atsushi uses electrodes attached to the head of a user to acquire input and operation information, Applicants' arguments are not persuasive (see page 9, paragraph 11 of the Office Action). However, the fact that the Atsushi uses electrodes as input means, coupled with the expressly described object of Atsushi, which is to control a device by using measured localized brain functions of a user, rather than by using conventional input means (see paragraph [0001]), fully supports the assertion that Atsushi teaches away from the present invention. More specifically, one of ordinary skill in the art would not be motivated to combine the use of conventional input means with the teachings of Atsushi because Atsushi clearly teaches that conventional input means are not to be used to acquire input and operation information. The purpose of Atsushi is to provide a means of obtaining information through a non-conventional manner (i.e., via electrodes), and to modify Atsushi in the manner asserted by the Examiner, to obtain information through conventional means, would be entirely against to its teachings. Therefore, there is no motivation to modify Atsushi with Ho in the manner suggested by the Examiner.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes judging a degree of concentration of the user to the learning program using the measurement information of the blood flow rate and the attention information. Atsushi does not disclose this feature,

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and the Examiner does not rely upon Atsushi for teaching judging a degree of concentration.

Therefore, Atsushi fails to teach or suggest "acquiring audio or video information of said user of said information processing apparatus so as to obtain attention information of said user through at least one of a microphone and a camera connected to said information processing apparatus" as recited in claim 1, and as similarly recited in claims 3 and 13.

Furthermore, Atsushi fails to teach or suggest "judging a degree of concentration of said user to said learning program using said measurement information of said blood flow rate and said attention information" as recited in claim 1, and as similarly recited in claims 3 and 13.

The above noted deficiencies of Atsushi are not supplied by any of the other references of record, namely Ho, whether taken individually or in combination with each other. Therefore, combining the teachings of Atsushi and Ho in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Ho teaches a learning method and system that considers a student's concentration level. However, there is no teaching or suggestion in Ho of the learning condition judging program executable in an information processing apparatus and a system for judging a learning condition, as recited in claims 1, 3 and 13 of the present invention.

Ho discloses a computer-aided-educational method and system that considers a student's concentration level when teaching the student. The system

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monitors automatically more than once the student's concentration-sensitive behavior while the student is working on the study materials. Through monitoring the student's volitional or involuntary behavior, the system provides an indication on the student's concentration level. Based on the indication, the system reacts accordingly. Reactions include, for example, providing rewards, punishments, and stimulation, or changing the study materials. The system can also react by asking the student a question to stimulate the student or to assess the student's level of understanding. Based on the student's response, the system may change to more appropriate study materials, or a more appropriate presentation style.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes acquiring audio or video information of the user of the information processing apparatus, so as to obtain attention information of the user through at least one of a microphone and a camera connected to the information processing apparatus. Applicants submit that it would not be obvious to combine Atsushi and Ho because Atsushi teaches away from the present invention. The Examiner is reminded of MPEP 2145(X)(D)(2), which provides:

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) (The claimed catalyst which contained both iron and an alkali metal was not suggested by the combination of a reference which taught the interchangeability of antimony and alkali metal with the same beneficial result, combined with a reference expressly excluding antimony from, and adding iron to, a catalyst.).

As previously discussed, Atsushi clearly teaches away from using input means such as a microphone and a camera, as claimed, because Atsushi is

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directed to eliminating the need for such input means. As such, one of ordinary skill in the art would not be motivated to combine Ho with Atsushi.

In response to Applicants' arguments that Atsushi teaches away from using conventional input means, the Examiner asserts that because Atsushi uses electrodes attached to the head of a user to acquire input and operation information, Applicants' arguments are not persuasive (see page 9, paragraph 11 of the Office Action). However, as previously discussed, the fact that the Atsushi uses electrodes as input means, coupled with the expressly described object of Atsushi (i.e., to control a device by using measured localized brain functions of a user, rather than by using conventional input means (see paragraph [0001])), fully supports the assertion that Atsushi teaches away from the present invention. More specifically, one of ordinary skill in the art would not be motivated to combine the use of conventional input means with the teachings of Atsushi because Atsushi clearly teaches that conventional input means are not to be used to acquire input and operation information. The purpose of Atsushi is to provide a means of obtaining information through a non-conventional manner (i.e., via electrodes), and to modify Atsushi in the manner asserted by the Examiner, to obtain information through conventional means, would be entirely against to its teachings. Therefore, there is no motivation to modify Atsushi with Ho in the manner suggested by the Examiner.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes judging a degree of concentration of the user to the learning program using the measurement information of the blood

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flow rate and the attention information. Ho does not disclose this feature, and the Examiner does not rely upon Ho for teaching this feature.

As described in the abstract, Ho teaches where the system provides an indication on the student's concentration level "[t]hrough monitoring the student's volitional or involuntary behavior." This is quite different from the present invention, where a user's degree of concentration is determined by using the measurement information, where the measurement information is previously claimed as "a blood flow rate in a brain of a user." Accordingly, as conceded by the Examiner, Ho does not teach judging a degree of concentration, as claimed.

Therefore, Ho fails to teach or suggest "acquiring audio or video information of said user of said information processing apparatus so as to obtain attention information of said user through at least one of a microphone and a camera connected to said information processing apparatus" as recited in claim 1, and as similarly recited in claims 3 and 13.

Furthermore, Ho fails to teach or suggest "judging a degree of concentration of said user to said learning program using said measurement information of said blood flow rate and said attention information" as recited in claim 1, and as similarly recited in claims 3 and 13.

The above noted deficiencies of Atsushi in view of Ho are not supplied by any of the other references of record, namely, whether taken individually or in combination with each other. Therefore, combining the teachings of *** and *** in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

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Fumio teaches an education supporting device. However, there is no teaching or suggestion in Fumio of the the learning condition judging program executable in an information processing apparatus and a system for judging a learning condition, as recited in claims 1, 3 and 13 of the present invention.

Objectives of Fumio are to enhance a learner's understanding, to advance learning contents, and to improve the learning efficiencies. To achieve these objectives, Fumio provides an education supporting device that supports the learning of a learner by reproducing an optical disk. On the optical disk, learning contents are recorded, at every chapter, distinctively by using indexes on a player. The player is equipped with an α -wave detector 15, which detects the α wave of the brain wave of the learner, a concentration degree discriminating part 16, which decides the degree of concentration by the α -wave detection of the α -wave detector 15, and an index detection part 17, which detects the index of the chapter of learning contents low in the degree of concentration, according to the decision result of the concentration decision part 16. In Fumio, the chapter is repeatedly reproduced according to the detected index of the chapter low in the degree of concentration.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes acquiring audio or video information of the user of the information processing apparatus, so as to obtain attention information of the user through at least one of a microphone and a camera connected to the information processing apparatus. Fumio does not teach this feature, and the Examiner does not rely upon Fumio for teaching this feature.

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Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 3 and 13, includes judging a degree of concentration of the user to the learning program using the measurement information of the blood flow rate and the attention information. Contrary to the Examiner's assertions, Fumio does not disclose this feature. To support the assertion that Fumio teaches this feature, the Examiner cites Fig. 1 and the accompanying text in the constitution (abstract). However, neither the cited text nor any other portion of Fumio teaches the claimed features.

For example, Fumio does not teach judging a degree of concentration of the user using to the learning program using the measurement information of the blood flow rate and the attention information of the user. To the contrary, Fumio teaches the use of an α -wave detector 15, which detects the α wave of the brain wave of the learner, and a concentration degree discriminating part 16, which decides the degree of concentration by the α -wave detector 15. This is quite different from the present invention, where the degree of concentration is determined using the measurement information of the blood flow rate and the attention information of the user.

Therefore, Fumio fails to teach or suggest "acquiring audio or video information of said user of said information processing apparatus so as to obtain attention information of said user through at least one of a microphone and a camera connected to said information processing apparatus" as recited in claim 1, and as similarly recited in claims 3 and 13.

Furthermore, Fumio fails to teach or suggest "judging a degree of

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concentration of said user to said learning program using said measurement
information of said blood flow rate and said attention information" as recited in claim
1, and as similarly recited in claims 3 and 13.

Each of Atsushi, Ho and Fumio suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Atsushi, Ho and Fumio in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 3, 7 and 9-14 as being unpatentable over Atsushi in view of Ho, and further in view of Fumio are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1, 3, 7 and 9-14.

Claim 15 stands rejected under 35 C.F.R. §103(a) as being unpatentable in view of Atsushi, in view of Ho, further in view of Fumio, and even further in view of U.S. Patent Application Publication No. 2002/0150869 to Shpiro. Claim 15 is dependent on claim 1. Therefore, Applicants submit that dependent claim 15 is allowable for at least the same reasons previously discussed regarding independent claim 1.

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In view of the foregoing amendments and remarks, Applicants submit that claims 1, 3, 7 and 9-15 are in condition for allowance. Accordingly, early allowance of claims 1, 3, 7 and 9-15 is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 500.42880X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



Donna K. Mason
Registration No. 45,962

DKM/cmd
(703) 684-1120